



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,787	08/14/2001	Luan Tran	MI22-1784	3875

21567 7590 11/13/2002

WELLS ST. JOHN ROBERTS GREGORY & MATKIN P.S.
601 W. FIRST AVENUE
SUITE 1300
SPOKANE, WA 99201-3828

EXAMINER

WEISS, HOWARD

ART UNIT	PAPER NUMBER
----------	--------------

2814

DATE MAILED: 11/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/930,787

Applicant(s)

TRAN ET AL.

Examiner

Howard Weiss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Attorney's Docket Number: MI22-547

Filing Date: 8/14/01

Continuing Data: Continuation of 08/842,230 (4/22/97 now U.S. Patent No. 6,297,129)

Claimed Foreign Priority Date: none

Applicant(s): Tran et al. (Reinberg)

Examiner: Howard Weiss

Election/Restrictions

1. Applicant's election without traverse of Group I, Claims 1 to 26, in Paper No. 5 is acknowledged. Claims 27 to 43 have been canceled.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 to 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claims 1, 7, 13, 18 and 22 are indefinite because they contain the phrase "equal to less than." This phrase is ambiguous. The Examiner suggests deleting "equal to" from the stated claims to clarify the stated limitation (This is also supported by the Specification).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1 to 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi et al. (U.S. Patent No. 5,383,151), Juengling et al. (U.S. Patent No. 5,756,390) and Fazan et al. (IEDM 92).

Onishi et al. show most aspects of the instant invention (e.g. Figures 1(c) and 4 and Column 3 Lines 26 to 56) including a DRAM cell memory array with folded bit lines **14** and LOCOS field oxide **6**. The cells are substantially in a straight line and the areas of the cells are less than $6F^2$ (Column 4 lines 22 and 23). Onishi et al. do not show "F" no greater than 0.25 microns and the field oxide thickness to be less than 2500 Angstroms.

Juengling et al. teach (e.g. Figures 3 and Column 8 Lines 37 to 44) teach to make LOCOS field oxide regions **307** less than 2500 Angstroms to reduce stress induced defects in sub-half-micron size DRAMS (Column 1 Lines 26 to 64). Fazan et al. teach (e.g. Table 1) that sub-half-micron DRAM trends are for pitch values and cell areas (i.e. 256 M densities and greater) ~~are~~ consistent with Juengling et al. to increase cell density. It would have been obvious to a person of ordinary skill in the

Art Unit: 2814

art at the time of invention to make LOCOS field oxide regions less than 2500 Angstroms and have pitch sizes as claimed to reduce stress induced defects in sub-half-micron size DRAMS and to increase cell densities.

8. Claims 7 to 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi et al., Juengling et al. and Fazan et al., as applied to Claim 1 above, and in further view of Aoki et al. (U.S. Patent No. 5,747,844).

Onishi et al., Juengling et al. and Fazan et al. show most aspects of the instant invention (Paragraph 7) except for the active areas continuous and adjacent DRAM cells isolated by conductive lines. Aoki et al. teach (e.g. Figure 1(b)) to use conductive lines (i.e. Field Shield Isolation) and continuous active areas in DRAM cell memories to enable design rule relaxation $6F^2$ geometry (see section on CELL CONCEPT). It would have been obvious to a person of ordinary skill in the art at the time of invention have the active areas continuous and use conductive lines as isolation as taught by Aoki et al. in the device of Onishi et al., Juengling et al. and Fazan et al. to enable design rule relaxation $6F^2$ geometry.

Conclusion

9. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications. The official TC2800 Before-Final, **(703) 872-9318**, and After-Final, **(703) 872-9319**, Fax numbers will provide the fax sender with an auto-reply fax verifying receipt of their fax by the USPTO.

Art Unit: 2814

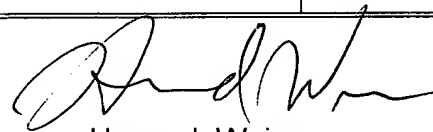
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(703) 308-4840** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 Receptionist at **(703) 308-0956**.

11. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/ 204, 305, 532	11/7/02
Other Documentation: none	
Electronic Database(s): EAST, IEL	11/7/02

HW/hw
7 November 2002



Howard Weiss
Examiner
Art Unit 2814